1, wherein [the conductor layers] said superconducting tapes are made from the group consisting of metals [and/or] and alloys with low electric resistance based on a metal selected from the group consisting of aluminum, copper and silver.

19) The flexible conductor core for superconducting power cable according to claim 1, wherein a ratio of the number of superconducting tapes of said layers placed in opposite direction to one another is between 1:1 and 1:2.

20) The flexible conductor core for superconducting power cable according to claim 1, wherein [the] superconducting elements of the flexible conductor core to be used may be a shape selected from the group consisting of flat, round oval and a sector.

RESPONSE

This is in response to the Office Action of March 21, 2003.

Applicant have amended all claims, but claim 18 which is canceled.

Certain changes were made in the specification. However, no new matter was added. Terms were merely clarified based upon a more correct translation of the technical terms from the Spanish patent application upon which the US application is based.

Additionally, verbiage from the claim 12 was transferred into the specification. Such a transfer is allowed, since the claims are also part of the specification.

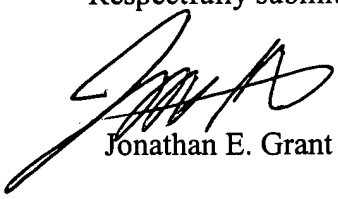
Additional corrections are based on material from the rest of the specification and from the drawings.

The patent application is now in condition for allowance.

Please call or fax the undesigned at (301) 603-9071 if you have any questions or comments.

Thank you.

Respectfully submitted,



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12) A flexible superconducting core for a superconducting power cable, said core comprising:

a) a helical externally corrugated flexible tubular element comprised of stainless steel;

b) a stainless steel core mesh positioned around said corrugated flexible central core element to provide a relatively flat surface, said mesh consisting of:

i) a first layer of steel tape of one size; and

ii) a second layer of steel tape having a different said size from said first layer of said steel tape, said first layer being positioned over said second layer;

c) a layer of at least one copper tape, positioned on top of said second layer of said steel tape;

d) a plurality of superconducting tapes layered over said at least one said copper tape, forming a first group of a plurality of superconducting tape layers;

e) a second group of a plurality of superconducting tape layers, at least one said layer of said second group positioned on top of said first group of plurality of superconducting tapes being wound in one direction opposite that of (d); and

wherein a pitch of all the layers varies from a maximum P_{max1} (1000 cm) and P_{max2} (1000 cm) in the intermediate layers and a P_{min1} (2 cm) and P_{min2} (2 cm) in the external layers, while a twist of the tapes in all of the layers varies from α_{max1} (45 degrees) to α_{min1} (0 degrees) and from α_{max2} (45 degrees) to α_{min2} (0 degrees) in at least one of the layers of tapes placed between the external surface of the core and the internal part

of the layer, being the current distribution between the layers uniform and each cable layer operating at total current conductance.

13) The flexible conductor core according to claim 1, wherein said flexible tubular element has an external diameter of preferably between 4 and 6 cm , an internal diameter between 2 and 4 cm, a corrugation depth ranging between 0.5 cm and 1 cm, and a corrugation pitch between 1.6 and 3 cm.

14) The flexible conductor core for claim 1, wherein the stainless steel tape for said first layer has a width between 4 cm and 5 cm and a thickness between 0.005 to 0.006 cm and spacing ranging from 0.15 to 0.2 cm and the second layer of stainless steel tape is applied which has a width ranging from 2.5 to 4 cm and a thickness ranging from 0.001 to 0.002 cm with a spacing ranging from 0.1 to 0.15 cm.

15) The flexible conductor core for a superconducting power cable according to claim 1, wherein the tubular element consists of a first layer of copper tapes with a width ranging from 0.25 cm to 4.0 cm and a thickness ranging from 0.025 to 0.030 cm with a laying length ranging from 2 to 100 cm.

16) The flexible conductor core for a superconducting power cable according to claim 1, wherein said core operates with a current selected from the group consisting of direct current, alternate current, current pulses and combinations thereof.

17) The flexible conductor core for a superconducting power cable according to claim 1, wherein said superconducting tapes are made from the group consisting of metals and alloys with low electric resistance based on a metal selected from the group consisting of aluminum, copper and silver.

19) The flexible conductor core for superconducting power cable according to claim 1, wherein a ratio of the number of superconducting tapes of said layers placed in opposite direction to one another is between 1:1 and 1:2.

20) The flexible conductor core for superconducting power cable according to claim 1, wherein superconducting elements of the flexible conductor core to be used may be a shape selected from the group consisting of flat, round oval and a sector.